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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/855,026	05/15/2001	Evangelos Tirfon Laskaris	839-1008	7982

7590 09/11/2002
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EXAMINER

PEREZ, GUILLERMO

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 09/11/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/855,026

Applicant(s)

LASKARIS ET AL.

Examiner

Guillermo Perez

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The disclosure is objected to because of the following informalities: pages 1-3 are missing all the applications serial numbers.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-4, 10, 13-14, 16-18, 20-21, and 23-24 are rejected under 35

U.S.C. 102(b) as being anticipated by Rios (U. S. Pat. 4,277,705).

Referring to claim 1, Rios discloses a synchronous machine, a rotor (6) comprising:

a rotor core (28);

a super-conducting coil winding (16) extending around at least a portion of the rotor core (28), the coil winding (16) having a pair of side sections on opposite sides of the rotor core (28);

at least one tension rod (32) extending between the pair of side sections of the coil winding (16) and through the rotor (6);

a coil housing (26,28) at each of opposite ends of the tension rod (32), wherein the housing (26,28) wraps around the coil winding (16) and is attached to the tension rod (32).

Referring to claim 2, Rios discloses that the coil housing (26,28) is a U-shaped channel.

Referring to claim 3, Rios discloses that the rotor core (28) is in an internal vacuum.

Referring to claim 4, Rios discloses a cryogenic coupling providing cooling fluid to the coil winding (16), wherein the housing (26,28) and tension rod (32) are cooled by conduction from the coil winding (16).

Referring to claim 10, Rios discloses that the housing (26,28) is formed of a metal material selected from a group consisting of aluminum, Inconel, and titanium alloys.

Referring to claim 13, Rios discloses that the tension rod (32) extends through a longitudinal axis of the rotor (6).

Referring to claim 14, Rios discloses that the tension rod (32) extends through conduits in the rotor core (28).

Referring to claim 16, Rios discloses a method for supporting a super-conducting coil winding (16) on a rotor core (28) of a synchronous machine comprising the steps of:

- extending a tension bar (32) through a conduit in the rotor core (28);
- inserting a housing (26,28) over a portion of the coil (16);
- attaching an end of the tension bar (32) to the housing (26,28).

Referring to claim 17, Rios discloses inserting a second housing (26,28) over a second portion of the coil (16) and attaching the second housing (26,28) to a second end of the tension bar (32).

Referring to claim 18, Rios discloses that the tension bar (32) extends through a rotational axis of the rotor core (28), and the first portion and second portion of the coil (16) are on opposite sides of the rotor (6).

Referring to claim 20, Rios discloses cryogenically cooling the coil (16), and cooling the housing (26,28) and tension rod (32) by heat transfer between the coil (16) and the housing (26,28) and tension rod (32).

Referring to claim 21, Rios discloses a rotor for a synchronous machine comprising:

- a rotor core having a conduit orthogonal to a longitudinal axis of the rotor;
- a racetrack super-conducting (SC) coil winding in a planar racetrack shape parallel to the longitudinal axis of the rotor;
- a tension rod inside the conduit of the core; and

a housing coupling the coil winding to the tension rod.

Referring to claim 23, Rios discloses a plurality of conduits orthogonal to the longitudinal axis of the rotor core and in a plane defined by the SC coil.

Referring to claim 24, Rios discloses that the tension rod (32) has a flat end abutting the coil (16 through the housing 28).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 5-9, 11-12, 15, 19, 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rios in view of Laskaris (U. S. Pat. 3,991,333).

Rios substantially teaches the claimed invention except that it does not show a dowel coupling the housing to the tension rod. Rios does not disclose a hollow pin coupling the housing to the tension rod. Rios does not disclose that the pin extends through an aperture in an end of the tension rod and through apertures in side flanges on the coil housing. Rios does not disclose that the pin extends through an aperture in an end of the tension rod and through the coil housing. Rios does not disclose a hollow pin formed of a high strength material selected from a group of metals consisting of Inconel and titanium alloys.

Laskaris discloses a dowel (30) coupling the housing (20, 36) to the tension rod (38). Laskaris discloses a hollow pin (30) coupling the housing (20,36) to the tension rod

(38). Laskaris discloses that the pin (30) extends through an aperture in an end of the tension rod (38) and through apertures in side flanges on the coil housing (20,36). Laskaris discloses that the pin (30) extends through an aperture in an end of the tension rod (38) and through the coil housing (20,36). Laskaris invention has the purpose of providing a rigid support to the windings.

It would have been obvious at the time the invention was made to modify the machine of Rios and provide it with the fastening configuration disclosed by Laskaris for the purpose of providing a rigid support to the windings.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to fabricate the fastening means with claimed materials since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

3. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rios in view of Nottingham (U. S. Pat. 4,072,873).

Rios substantially teaches the claimed invention except that it does not show clamps at opposite ends of the coil.

Nottingham discloses clamps (25,26) at opposite ends of the coil (18). Nottingham's invention has the purpose of securing the end turns in a highly conductive and mechanically strong union.

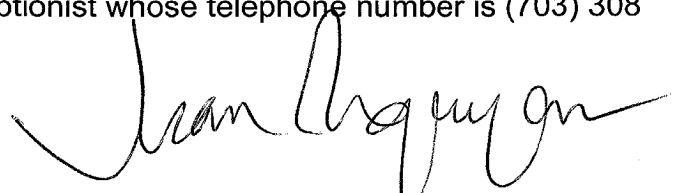
It would have been obvious at the time the invention was made to modify the machine of Rios and provide it with the clamps disclosed by Nottingham for the purpose of securing the end turns in a highly conductive and mechanically strong union.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guillermo Perez whose telephone number is (703) 306-5443. The examiner can normally be reached on Monday through Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308 1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305 3432 for regular communications and (703) 305 3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 0956.



TRAN NGUYEN
PRIMARY EXAMINER

Guillermo Perez
September 7, 2002